# REPORT DOCUMENTATION PAGE Form Approved OMB NO. 0704-0188 The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggesstions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA, 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any oenalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

PLEASE DO N	OT RETURN YOÚF	R FORM TO THE AB	BOVE ADDRESS.				
1. REPORT DATE (DD-MM-YYYY) 2. REPORT TYPE				3. DATES COVERED (From - To)			
28-08-2018	3	,	Final Report			15-Aug-2013 - 30-May-2018	
4. TITLE AN	ND SUBTITLE			5a. C0	ONTR	ACT NUMBER	
Final Repo	rt: Natural Res	sources and Ar	med Conflict	W911	W911NF-13-1-0332		
				5b. GI	5b. GRANT NUMBER		
				5c. PR	PROGRAM ELEMENT NUMBER 5011		
6. AUTHORS				5d. PR	OJEC	CT NUMBER	
				5e. TA	5e. TASK NUMBER		
				5f. W0	WORK UNIT NUMBER		
University of	MING ORGANI of North Carolina rsity City Boulev	- Charlotte	S AND ADDRESSES			PERFORMING ORGANIZATION REPORT MBER	
Charlotte, N	IC	28223	3 -0001				
9. SPONSO (ES)	RING/MONITO	RING AGENCY	NAME(S) AND ADDRES	SS		SPONSOR/MONITOR'S ACRONYM(S) RO	
U.S. Army Research Office P.O. Box 12211						SPONSOR/MONITOR'S REPORT MBER(S)	
Research Ti	riangle Park, NC	27709-2211			644	40-LS-MRI.37	
12. DISTRIE	BUTION AVAIL	BILITY STATE	MENT				
Approved for	public release; d	istribution is unli	nited.				
13. SUPPLE The views, o	EMENTARY NO pinions and/or fir	TES adings contained i			nd sh	ould not contrued as an official Department	
14. ABSTRA	ACT						
15. SUBJEC	CT TERMS						
	TY CLASSIFICA		17. LIMITATION OF ABSTRACT	15. NUME OF PAGES		19a. NAME OF RESPONSIBLE PERSON James Walsh	
UU	UU	UU	UU			19b. TELEPHONE NUMBER 704-687-7469	
		<del></del>				G: 1 1E 200 (B 0/00)	

as of 29-Aug-2018

Agency Code:

Proposal Number: 64440LSMRI Agreement Number: W911NF-13-1-0332

**INVESTIGATOR(S):** 

Name: James Walsh Email: jwalsh@uncc.edu Phone Number: 7046877469

Principal: Y

Organization: University of North Carolina - Charlotte

Address: 9201 University City Boulevard, Charlotte, NC 282230001

Country: USA

DUNS Number: 066300096 EIN: 560791228

Report Date: 30-Aug-2018 Date Received: 28-Aug-2018

Final Report for Period Beginning 15-Aug-2013 and Ending 30-May-2018

Title: Natural Resources and Armed Conflict

Begin Performance Period: 15-Aug-2013 End Performance Period: 30-May-2018

Report Term: 0-Other

Submitted By: James Walsh Email: jwalsh@uncc.edu Phone: (704) 687-7469

**Distribution Statement:** 1-Approved for public release; distribution is unlimited.

STEM Degrees: 1 STEM Participants: 4

Major Goals: Research Aim

Develop theory, data, and tools to understand how armed actors' resource bases influence their political, strategic, and military choices during civil conflicts.

#### Research Problem

What explains the choice of strategies of violence by civil war combatants and outside actors? Governments and rebel groups, as well as their external supporters, can pursue their wartime goals with a range of violent strategies. This project improves understanding how the resource bases of actors, including their access to natural resource wealth, involvement in criminal activities, and control of territory, influence the dynamics of violence during civil wars.

### Approach

Combatants need resources—some combination of people, money, weapons, and territory—to sustain their activities. We on how variation in the source and scale of such resources influences the strategic choices and violent behavior of both rebel movements and the governments they oppose.

Existing research has hypothesized relationships between the exploitation of natural resources, transnational crime, and the control of territory, and the dynamics of civil wars. But theory and data limitations make it difficult to determine if these relationships are specific to particular conflicts or regions of the world, and if these three factors have distinct effects on combatants' choices and actions. For this reason, a key goal of our project is to develop new theory and test this with new data collected at the micro- and organizational levels.

We use this data to test novel explanations of how the political and economic activities that sustain rebel groups influences conflict dynamics. Existing work has implicitly assumed that different sources of income for rebel organizations have similar consequences. In contrast, we theorize that the social relationships between rebels and producers shapes the course of violence during armed conflicts. Non-state violent actors have little incentive to avoid mistreating civilians or to engage in negotiations when they directly coerce or extort producers, as is often the case in artisanal mining and the cultivation of illegal drugs. In other situations, however, armed groups must secure the cooperation of outsiders to generate income. For example, violent non-state actors that engage in illegal taxation or international smuggling must ensure that they do not throttle local economic activity. This should moderate their use of indiscriminate violence, make them more willing to provide local public goods, and reduce acts of terrorism that threaten current or future supporters. The social relationships between rebels and producers should also influence the strategic choices of governments; they may moderate their use of indiscriminate violence

as of 29-Aug-2018

when rebels have weak relationships to the local population, for example, but resort to such violence when the rebels are able to threaten their sovereignty by controlling territory.

## **Accomplishments:** Key findings include:

- Existing focus on either grievances or "greed" as the cause of the outbreak of ethic civil conflicts. We develop a theory which holds that natural resources only increase the likelihood of civil conflict when powerful ethnic grievances are in place. Political exclusion and the presence of valuable natural resources interact with one another to substantially increase the likelihood of ethnic armed conflict (Asal et al., Journal of Conflict Resolution, 2015).
- Why do some rebel groups attack civilians and engage in terrorism? Research has suggested that rebels earning income from natural resources are less reliant on civilian support and target civilians with violence and terrorism. We introduce the Rebel Contraband Dataset that measures the extent to which rebels exploit natural resources or rely on criminal activities. Rebels who earn income from natural resource exploitation engage in more violence against civilians. This is the first systematic test of the relationship between rebel finance and treatment of the civilian population (Walsh et al., 2018, Journal of Peace Research).
- The Rebel Contraband Dataset also allows us to more accurately describe patterns in rebel reliance on natural resources and criminal activity to finance their activities. Roughly half of rebel groups rely on a wide range of natural resources and criminal activity to fund violence. The most common methods of rebel finance are extortion and smuggling (Conrad et al., 2018, Peace and Conflict).
- How rebels earn income also matters for conflict dynamics. Here our theoretical innovation is to distinguish between extortion and smuggling. These strategies of revenue extraction influence rebel relations with the civilian population, which in turn influences their strategies of violence. Conflicts involving rebels that smuggle last longer (Conrad et al., forthcoming, Journal of Conflict Resolution). Conversely, extortion of natural resources makes rebel groups more likely to engage in sexual violence (Whitaker, Walsh, and Conrad, forthcoming, Journal of Politics). Extortion also creates incentives for rebels to provide healthcare services to civilians to maintain the health of their coerced workforce (Conrad, Midwest Political Science Association, 2018). Funding from diaspora communities increases the duration of conflicts (Whitaker and Setliff, manuscript, 2017), while conflicts that involve rebel engagement in criminal activities leads to longer conflicts (Piazza and Piazza, Terrorism and Political Violence, 2017).
- Existing literature has focused on rebel's deliberate killings of civilians as the only measured type of civilian victimization. We collect and analyze organizational-level data on rebel violation of a wide range of human rights. Many rebel groups never engage in measurable violations of human rights, but others engage in frequent and systematic torture, imprisonment, property confiscation, and sexual violence (Conrad et al., 2018, Peace and Conflict). Rebel movements that profit from natural resources are more likely to employ child soldiers, for example (Faulkner, van der Haer, and Whitaker, Network of European Peace Scientists, 2017).
- Natural resource wealth also influences government strategies of violence. Countries with oil wealth experience greater terrorism; Piazza (Public Choice, 2017) finds that this is because oil wealth leads governments to abuse human rights. Uzonyi, Walsh, and Whitaker (manuscript, 2017) find that governments restrain their use of indiscriminate violence when rebels earn income from natural resources as a way to win popular support during conflicts. Oil-rich states are more likely to intervene in civil wars, but less likely to do so with their own military forces. Oil wealth creates incentives for governments to "coup proof" their militaries, making them less effective at projecting power into civil conflicts elsewhere (Boyle, Piazza, and Walsh, International Studies Association, 2017).
- We turn from explaining the consequences of rebel finance to exploring its causes. Aronson, Huth, and Walsh (American Political Science Association, 2018) show that extortion drives a wedge between rebels and civilians by depriving non-combatants of income. Rebels pay this cost when they are weaker than the governments they oppose, lose other sources of income, suffer battlefield losses, or have opportunities to exploit a quick influx of funding (for example, to arm and train recruits).
- There is debate in the literature about whether the location and value of natural resource wealth increases conflict. Influential studies find that countries with more natural resource wealth are more likely to experience civil wars, for example. More recent work (including Asal et al., 2015, Journal of Conflict Resolution) has investigated whether regions within countries with natural resource wealth are vulnerable to conflict. Findings have been mixed. One reason for this is that many studies look only at individual countries or one or a few resources. Little work also considers how changes in the prices of natural resources, not merely their location, influences conflict. To address these limitations, we developed the Natural Resource Location Dataset. This data set includes geo-located information about 167 different types of natural resources in 84 developing countries. It also includes detailed information about the world, U.S., and local prices of resources and commodities. Findley et al. (American Political Science Association, 2018) use this greatly-expanded data source to estimate how the location and value of resource wealth influences the onset of conflict. We theorize that changes in local prices should be the largest driver of any relationship between resources and conflict in a location. However, local prices are not independent of

as of 29-Aug-2018

world prices; supply and demand shocks elsewhere in the world influence world prices, which feed into local prices. To address this endogenous relationship, we use world and US prices to instrument for local prices. The key finding is that increases in the value of all natural resources in a location are associated with subsequent increases in conflict events.

- In a series of papers (Tao, et al., Transactions in GIS, 2016; Tao et al., American Political Science Association, 2017; Aronson et al., American Political Science Association, 2017, 2018), we develop a new, theoretically-informed measure of territorial control during civil wars. This allows us to measure, across an ordinal range, which actor controls locations as small as 5km grids for each day. We combine this data with new theory about how shifts in territorial control influence combatants' political and military strategies. We find that initial patterns of rebel violence shift over time. In areas that rebels are interested in conquering, their forces escalate the use of violence over time. However, in areas that are under secure rebel control, violence spikes initially, but then declines quickly. We theorize that these patterns are driven the interaction of rebels' military objectives of defeating government forces on the battlefield, and their interests in increasing support from civilians for their political objectives.
- In realizing these accomplishments, we developed new, open-source data and tools that will be of use to the scholarly and academic communities. These include the project website (http://www.civilwardynamics.org), the Rebel Contraband Dataset, the Resource Location Dataset, The Rebel Human Rights Dataset, and the data on territorial control described above. We also developed new software for automating the extraction of event characteristics and geo-locations from text (Halterman, Journal of Open Source Software, 2016; Halterman, Society for Political Methodology, 2018), a QGIS plug-in for calculating zones of territorial control, and the CIVET interface for human-assisted coding of variables from text.

as of 29-Aug-2018

**Training Opportunities:** The project provided many training opportunities to graduate and undergraduate students; details on the number and identity of these students are provided elsewhere in this report. Graduate students in Government (University of Texas at Austin), Public Policy (UNC Charlotte), Geography (UNC Charlotte), and Political Science (University of Albany) have been engaged as research assistants. Specific skills these graduate students learned included systematic data coding and collection, managing teams of (mostly undergraduate) coders, data analysis skills (in ArcGIS, QGIS, Python, R, and Stata), and software development (in QGIS and Python).

The project has also employed dozens of undergraduate research assistants at UNC Charlotte, the University of Texas at Austin, and the University of Albany. These students acquired skills in data collection (emphasizing the importance of reliability and validity), statistical analysis, and team work. A number of these students have used data from the project to write Honors Theses. Two students entered PhD programs after graduation; multiple students have gone on to purse graduate training in a variety of fields.

Co-Pls on the project co-authored research papers with graduate students and an undergraduate student. These include:

Paper Title: Financing Rebellion

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Kaitlin Hudak, Public Policy, University of North Carolina at Charlotte

Paper Title: Rebel Natural Resource Exploitation and the Duration of Civil Wars

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Kevin T. Greene, Political Science, University of Pittsburgh

Paper Title: Accounting for Rebellion: How Rebels Finance Their Violence

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Kevin T. Greene, Political Science, University of Pittsburgh

Paper Title: Rebel Human Rights Abuses During Civil Wars

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Samuel Wilmer, Political Science, Pennsylvania State University

Paper Title: Crime Pays

Co-PI Author: James A. Piazza

Graduate Student Co-Author: Scott Piazza, Political Science, Pennsylvania State University

Paper Title: Rebel Resource Extraction and Healthcare: Strategic Incentives for Social Service Provision Co-PI

Authors: Justin M. Conrad

Graduate Student Co-Author: Liana Reyes-Reardon, Rice University

Paper Title: Territorial Control and Violence Against Civilians nn Civil Wars

Co-PI Authors: Thill, Walsh

Graduate Student Co-Author: Ran Tao, Geography, University of North Carolina at Charlotte

Paper Title: Territory, Battles, and Terrorism in Civil Wars: A Quantitative Analysis of Boko Haram in Nigeria Co-PI

Authors: Thill, Walsh

Graduate Student Co-Author: Ran Tao, Geography, University of North Carolina at Charlotte

Two graduate students also used support from the project to write papers without co-PI co-authors:

Graduate Student: Kevin Greene, Political Science, University of Pittsburgh Paper: Time to Lift the Curse?

Graduate Student: Andrew Halterman, Political Science, Massachusetts Institute of Technology Paper: Mordecai

Co-PIs also co-authored a paper with an undergraduate student:

Paper: Diaspora Support and Conflict Duration

Co-PI Author: Beth Elise Whitaker

Undergraduate Student: Isaac Setliff, Political Science, University of North Carolina at Charlotte

as of 29-Aug-2018

**Results Dissemination:** In addition to peer-reviewed publications, presentations at scholarly meetings, invited talks at other universities, and participation in the Minerva Annual Meeting and Program Review, we have sought outreach activities beyond the academic community. These include:

- Summary of findings from the Rebel Contraband Dataset in the Newsletter of the Africa Research Initiative, National Intelligence University.
- Research briefs on natural resources and conflict in Africa (available at www.civilwardynamics.org)
- Multiple presentations to the Joint Foreign Affairs Officer Program Africa Course.
- Multiple presentations to the NAVAIR Global Perspectives Seminar, October 2014 and April 2015.
- Presentation at the Washington, DC office of Global Witness.
- Presentation to the DHS/START SMA Lecture Series.
- Presentation to the Minerva SMA Lecture Series on Africa.
- Presentation to the Geostrategic Intelligence Seminar: Conflict in Africa, Defense Intelligence Agency.
- Meeting with Bryan Price and Daniel Milton, Combating Terrorism Center, United States Military Academy.
- Presentation at the Defense Intelligence Agency
- Post on "Political Violence at a Glance" blog on territorial control
- Presentation to the Military Operations and Law Conference, United States Pacific Command
- Presentation to the Committee on Assessing the Minerva Research Initiative and the Contribution of Social Science to Addressing Security Concerns, The National Academies of Science, Engineering, and Medicine
- Presentation to the Empirical Studies of Conflict meeting, United States Institute of Peace, Washington
- Presentations to the Minerva SMA Speaker Series

Honors and Awards: Nothing to Report

**Protocol Activity Status:** 

**Technology Transfer:** Nothing to Report

**PARTICIPANTS:** 

Participant Type: PD/PI

Participant: James Igoe Walsh Person Months Worked: 4.00

**Project Contribution:** International Collaboration:

International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Co PD/PI Participant: Jean-Claude Thill Person Months Worked: 2.00

**Project Contribution:** International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Co PD/PI Participant: Michael Findley Person Months Worked: 3.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

Participant Type: Co PD/PI Participant: James Piazza Person Months Worked: 2.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Co PD/PI Participant: Victor Asal Person Months Worked: 3.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Other Professional

Participant: Philip Schrodt Person Months Worked: 2.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Other Professional

Participant: Daniel Strandow Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

**Participant Type:** Other Professional **Participant:** Kenneth Cousins

Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: High School Student

Participant: Jackson Smith Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Andrew Halterman

Person Months Worked: 1.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Michelle Haragos

Person Months Worked: 2.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Katelin Hudak
Person Months Worked: 6.0

Person Months Worked: 6.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Jessica Hall Person Months Worked: 2.00

Project Contribution: International Collaboration:

International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Gavin Iddings
Person Months Worked: 2.00

**Funding Support:** 

**Funding Support:** 

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Ran Tao

Person Months Worked: 2.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

as of 29-Aug-2018

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Andrew Stravers

Person Months Worked: 3.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Ataurraheem Chaudhry

Person Months Worked: 1.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Tawheeda Wahabzada

Person Months Worked: 1.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Graduate Student (research assistant)

Participant: Michael Denly

Person Months Worked: 2.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Madison Bishop

Person Months Worked: 1.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Emily Young

Person Months Worked: 1.00 Funding Support:

Project Contribution: International Collaboration:

as of 29-Aug-2018

International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Raven Longhorne Person Months Worked: 1.00

**Project Contribution:** International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Ashley Huddleston Person Months Worked: 1.00

**Project Contribution:** International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Jordan Woods Person Months Worked: 1.00

**Project Contribution:** International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Justin Jones Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Kevin Greene Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Koffi Yao-Kouame

Person Months Worked: 1.00 **Funding Support:** 

**Project Contribution:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

International	Collaboration:
International	Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Sebastian Feculak Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Michelle Haragos Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Jason Sanft Person Months Worked: 1.00

**Project Contribution:** International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Samuel Wilmer Person Months Worked: 1.00

**Project Contribution:** International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Janelle Day Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Emily Grassett

Person Months Worked: 1.00

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

Project Contribution:	
International Collaboration:	
International Travel:	

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Andrea Greer Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Daniel Chapman Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Anna Scanlon
Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Louchi Chi

Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Alejandra Gaytan Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Vishal Duvvuru

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

Person Months Worked: 1.00 Funding Support:

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Amy Leung Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Josh Malett Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Josh Malett
Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Josh Hamlin
Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Josh Hamlin
Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

Participant: Haley Galloway Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Jennifer Johnson Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Kolby Vidrine Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Lily Hayes
Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Santiago Vallejo Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Joyce Jiang Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

as of 29-Aug-2018

**Funding Support:** 

**Funding Support:** 

**Funding Support:** 

Participant Type: Undergraduate Student

Participant: Gabby Torres
Person Months Worked: 1.00

Person Months Worked: 1.00
Project Contribution:
International Collaboration:

National Academy Member: N

Other Collaborators:

International Travel:

Participant Type: Undergraduate Student

Participant: Matt Tiritilli Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

Participant Type: Undergraduate Student

Participant: Yefan Zhou Person Months Worked: 1.00

Project Contribution: International Collaboration: International Travel:

National Academy Member: N

Other Collaborators:

#### **ARTICLES:**

Publication Type: Journal Article Peer Reviewed: Y Publication Status: 1-Published

**Journal:** Journal of Conflict Resolution

Publication Identifier Type: DOI Publication Identifier: 10.1177/0022002714567948

Volume: 1 Issue: 25 First Page #: 1

Date Submitted: 7/27/16 12:00AM Date Published:

Publication Location:

Article Title: Political Exclusion, Oil, and Ethnic Armed Conflict

Authors: Victor Asal, Michael Findley, James A. Piazza, James Igoe Walsh

Keywords: Natural resources, armed conflict, oil, civil war

**Abstract:** Why do members of some ethnic groups rebel against the state? One approach holds that groups subject to exclusion from national politics engage in armed conflict. We theorize that the presence of resource wealth moderates the effect of political exclusion. Ethnic groups subject to exclusion whose settlement area includes oil wealth are more likely to experience the onset of armed conflict than groups experiencing exclusion alone. We depart from the convention of cross-national analysis to examine sub-national, geocoded units of analysis—ethnic group settlement areas—to better capture the impact of natural resource distribution. Using data on ethnic group political exclusion derived from the Ethnic Power Relations database and geocoded indicators of we conduct a series of logistic regression analyses for the years 1946 to 2005. We find that exclusion alone increase the likelihood of conflict, while the presence of oil wealth further raises the risk of war.

**Distribution Statement:** 1-Approved for public release; distribution is unlimited.

Acknowledged Federal Support: Y

#### **CONFERENCE PAPERS:**

as of 29-Aug-2018

Publication Type: Conference Paper or Presentation Publication Status: 1-Published

Conference Name: International Studies Association

Date Received: 06-Aug-2017 Conference Date: 16-Mar-2016 Date Published:

Conference Location: Atlanta Paper Title: Oil and Terrorism Authors: James Piazza

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 1-Published

Conference Name: International Studies Association

Date Received: 09-Aug-2017 Conference Date: 16-Mar-2016 Date Published: 16-Mar-2016

Conference Location: Atlanta

Paper Title: Oil Wealth and Civil War Intervention

Authors: Emma Leonard Boyle, James Piazza, James Igoe Walsh

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: American Political Science Association

Date Received: 27-Aug-2016 Conference Date: 03-Sep-2016 Date Published: 03-Sep-2016

Conference Location: Philadelphia

Paper Title: Territorial Control and Violence Against Civilians in Civil Wars

Authors: Michael Findley, Daniel Strandow, Jean-Claude Thill, James Igoe Walsh

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: American Political Science Association

Date Received: 27-Aug-2016 Conference Date: 02-Sep-2016 Date Published: 02-Sep-2016

Conference Location: Philadelphia

**Paper Title:** Rebel Natural Resource Exploitation and the Duration of Civil Wars **Authors:** Justin Conrad, Kevin Greene, Beth Elise Whitaker, James Igoe Walsh

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: Midwest Political Science Association

Date Received: 06-Aug-2017 Conference Date: 15-Apr-2016 Date Published: 15-Apr-2016

Conference Location: Chicago

**Paper Title:** The Local Resource Curse **Authors:** Andrew Stravers, Michael Findley

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: Midwest Political Science Association

Date Received: 06-Aug-2017 Conference Date: 07-Apr-2017 Date Published:

Conference Location: Chicago

Paper Title: Time to Lift the Curse? Reexamining the Effect of Natural Resources on Civilian Victimization

Authors: Caleb Lucas, Kevin Greene, Thomas Bentley

Acknowledged Federal Support: Y

as of 29-Aug-2018

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: European Peace Science Conference

Date Received: 09-Aug-2017 Conference Date: 27-Jun-2017 Date Published:

Conference Location: Antwerp

Paper Title: Rebel Funding and Child Soldiers: Exploring the relationship between endowments and forcible

recruitment

Authors: Christopher Faulkner, Roos van der Haer, Beth Elise Whitaker

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: International Studies Association

Date Received: 09-Aug-2017 Conference Date: 17-Feb-2017 Date Published:

Conference Location: Baltimore

Paper Title: Diaspora Support and Conflict Duration

Authors: Isaac Setliff. Beth Elise Whitaker

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: Annual meeting of the American Political Science Association

Date Received: 27-Aug-2017 Conference Date: 30-Aug-2017 Date Published:

Conference Location: San Francisco

Paper Title: Territorial Control and Violence Against Civilians: Boko Haram in Nigria

Authors: Aronson Jacob, Tao Ran, Thill Jean-Claude, Walsh James

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: Annual meeting of the American Political Science Association

Date Received: 21-Apr-2018 Conference Date: 30-Aug-2017 Date Published:

Conference Location: San Francisco

Paper Title: Territorial Control and Violence Against Civilians: Boko Haram in Nigeria

Authors: Aronson Jacob, Tao Ran, Thill Jean-Claude, Walsh James

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: International Studies Association

Date Received: 21-Apr-2018 Conference Date: 07-Apr-2018 Date Published:

Conference Location: San Francisco

Paper Title: Soft Money Insurgency: The Determinants of Rebel Funding Strategies

Authors: Aronson Jacob, Walsh James, Huth Paul

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: Annual Meeting of the Society for Political Methodology

Date Received: 12-Aug-2018 Conference Date: 18-Jul-2018 Date Published:

Conference Location: Provo, Utah

Paper Title: Linking Events and Locations in Text

Authors: Andy Halterman

Acknowledged Federal Support: Y

as of 29-Aug-2018

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: American Political Science Association

Date Received: 27-Aug-2018 Conference Date: 31-Aug-2018 Date Published: 31-Aug-2018

Conference Location: Boston

Paper Title: Natural Resources and Civil Conflict: Evidence from a New Georeferenced Dataset

Authors: Michael Denly, Michael Findley, Andrew Stravers, James Igoe Walsh

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

**Conference Name:** American Political Science Association (APSA)

Date Received: 28-Aug-2018 Conference Date: 31-Aug-2018 Date Published: 31-Aug-2018

Conference Location: Boston

Paper Title: Control, Collaboration, and Rebel Violence Against Civilians

Authors: Jacob Aronson, Michael Findley, Kyosuke Kikuta, Ran Tao, Jean-Claude Thill, James Igoe Walsh

Acknowledged Federal Support: Y

Publication Type: Conference Paper or Presentation Publication Status: 0-Other

Conference Name: American Political Science Association annual meeting

Date Received: 28-Aug-2018 Conference Date: 31-Aug-2018 Date Published: 31-Aug-2018

Conference Location: Boston

Paper Title: Soft Money Insurgency: The Determinants of Rebel Funding Strategies

Authors: Jacob Aronson, Paul Huth, James Igoe Walsh

Acknowledged Federal Support: Y

#### **WEBSITES:**

URL: http://www.civilwardynamics.org

Date Received: 27-Aug-2016

**Title:** Resources and Conflict Project **Description:** Website for Minerva project

#### W911NF1310332

## Natural Resources and Armed Conflict Final Report

## James Igoe Walsh, University of North Carolina at Charlotte, Principal Investigator jwalsh@uncc.edu 31 August 2018

#### **Major Goals**

#### Research Aim

Develop theory, data, and tools to understand how armed actors' resource bases influence their political, strategic, and military choices during civil conflicts.

#### Research Problem

What explains the choice of strategies of violence by civil war combatants and outside actors? Governments and rebel groups, as well as their external supporters, can pursue their wartime goals with a range of violent strategies. This project improves understanding how the resource bases of actors, including their access to natural resource wealth, involvement in criminal activities, and control of territory, influence the dynamics of violence during civil wars.

#### Approach

Combatants need resources—some combination of people, money, weapons, and territory—to sustain their activities. We on how variation in the source and scale of such resources influences the strategic choices and violent behavior of both rebel movements and the governments they oppose.

Existing research has hypothesized relationships between the exploitation of natural resources, transnational crime, and the control of territory, and the dynamics of civil wars. But theory and data limitations make it difficult to determine if these relationships are specific to particular conflicts or regions of the world, and if these three factors have distinct effects on combatants' choices and actions. For this reason, a key goal of our project is to develop new theory and test this with new data collected at the micro- and organizational levels.

We use this data to test novel explanations of how the political and economic activities that sustain rebel groups influences conflict dynamics. Existing work has implicitly assumed that different sources of income for rebel organizations have similar consequences. In contrast, we theorize that the *social relationships* between rebels and producers shapes the course of violence during armed conflicts. Non-state violent actors have little incentive to avoid mistreating civilians or to engage in negotiations when they directly coerce or extort producers, as is often the case in artisanal mining and the cultivation of illegal drugs. In other situations, however, armed groups must secure the cooperation of outsiders to generate income. For example, violent non-state actors that engage in illegal taxation or international smuggling must ensure that they do not throttle local economic activity. This should moderate their use of indiscriminate violence, make them more willing to provide local public goods, and reduce acts of terrorism

that threaten current or future supporters. The social relationships between rebels and producers should also influence the strategic choices of governments; they may moderate their use of indiscriminate violence when rebels have weak relationships to the local population, for example, but resort to such violence when the rebels are able to threaten their sovereignty by controlling territory.

#### **Accomplished Goals**

Key findings from the project include:

- Existing focus on either grievances or "greed" as the primary cause of the outbreak of ethic civil conflicts. We develop a theory which holds that grievances are the key drives of civil conflict, and that natural resources only increase the likelihood of civil conflict when powerful ethnic grievances are in place. We find that political exclusion and the presence of valuable natural resources interact with one another to substantially increase the likelihood of ethnic armed conflict (Asal et al., *Journal of Conflict Resolution*, 2015).
- Why do some rebel groups attack civilians and engage in terrorism, while others do not? One powerful explanation points to the sources of rebel finance. Research has suggested that rebels earning income from natural resources are less reliant on civilian support and target civilians with violence and terrorism. We introduce the Rebel Contraband Dataset that measures the extent to which rebels exploit natural resources or rely on criminal activities. Rebels who earn income from natural resource exploitation engage in more violence against civilians. This is the first systematic test of the relationship between rebel finance and treatment of the civilian population (Walsh et al., 2018, *Journal of Peace Research*).
- The Rebel Contraband Dataset also allows us to more accurately describe patterns in rebel reliance on natural resources and criminal activity to finance their activities. Roughly half of rebel groups rely on a wide range of natural resources and criminal activity to fund violence. The most common methods of rebel finance are extortion and smuggling (Conrad et al., 2018, *Peace and Conflict*).
- How rebels earn income also matters for conflict dynamics. Here our theoretical innovation is to distinguish between extortion and smuggling. We hypothesize that these strategies of revenue extraction influence rebel relations with the civilian population, which in turn influences their strategies of violence. Conflicts involving rebels that smuggle last longer than those in which they extort or earn no income from natural resources (Conrad et al., forthcoming, Journal of Conflict Resolution). Conversely, extortion of natural resources makes rebel groups more likely to engage in sexual violence (Whitaker, Walsh, and Conrad, forthcoming, Journal of Politics). Extortion also creates incentives for rebels to provide healthcare services to civilians to maintain the health of their coerced workforce (Conrad, Midwest Political Science Association, 2018). Funding from diaspora communities also increases the duration of conflicts (Whitaker

and Setliff, manuscript, 2017), while conflicts that involve rebel engagement in criminal activities leads to longer conflicts (Piazza and Piazza, *Terrorism and Political Violence*, 2017).

- Existing literature has focused on rebel's deliberate killings of civilians as the only measured type of civilian victimization. We collect and analyze organizational-level data on rebel violation of a wide range of human rights. Many rebel groups never engage in measurable violations of human rights, but others engage in frequent and systematic torture, imprisonment, property confiscation, and sexual violence (Conrad et al., 2018, *Peace and Conflict*). Rebel movements that profit from natural resources are more likely to employ child soldiers, for example (Faulkner, van der Haer, and Whitaker, Network of European Peace Scientists, 2017).
- Natural resource wealth also influences government strategies of violence. Countries with oil wealth experience greater terrorism; Piazza (*Public Choice*, 2017) finds that this is because oil wealth leads governments to abuse human rights, which in turn creates grievances and opportunities that facilitate terrorism. Uzonyi, Walsh, and Whitaker (manuscript, 2017) find that governments restrain their use of indiscriminate violence when rebels earn income from natural resources as a way to win popular support during conflicts. Oil-rich states are more likely to intervene in civil wars, but less likely to do so with their own military forces. Oil wealth creates incentives for governments to "coup proof" their militaries, making them less effective at projecting power into civil conflicts elsewhere (Boyle, Piazza, and Walsh, International Studies Association, 2017).
- In more recent work, we turn from explaining the consequences of rebel finance to exploring its causes. Aronson, Huth, and Walsh (American Political Science Association, 2018) show that extortion drives a wedge between rebels and civilians by depriving noncombatants of income. Rebels pay this cost when they are weaker than the governments they oppose, lose other sources of income, suffer battlefield losses, or have opportunities to exploit a quick influx of funding (for example, to arm and train recruits).
- There is considerable debate in the literature about whether the location and value of natural resource wealth increases the likelihood and intensity of conflict. A number of influential studies have found that countries with more natural resource wealth are more likely to experience civil wars, for example. More recent work (including Asal et al., 2015, *Journal of Conflict Resolution*) has investigated whether regions within countries with natural resource wealth are vulnerable to conflict. Findings have been mixed. One reason for this is that many studies look only at individual countries or one or a few resources such as oil or minerals. Little work also considers how changes in the prices of natural resources, not merely their location, influences conflict. To address these limitations, we developed the Natural Resource Location Dataset. This data set includes geo-located information about 167 different types of natural resources in 84 developing countries. It also includes detailed information about the world, U.S., and local prices of

resources and commodities. Findley et al. (American Political Science Association, 2018) use this greatly-expanded data source to estimate how the location and value of resource wealth influences the onset of conflict. We theorize that changes in local prices should be the largest driver of any relationship between resources and conflict in a location. However, local prices are not independent of world prices; supply and demand shocks elsewhere in the world influence world prices, which feed into local prices. To address this endogenous relationship, we use world and US prices to instrument for local prices. The key finding is that increases in the value of all natural resources in a location are associated with subsequent increases in conflict events.

- In a series of papers (Tao, et al., *Transactions in GIS*, 2016; Tao et al., American Political Science Association, 2017; Aronson et al., American Political Science Association, 2017, 2018), we develop a new, theoretically-informed measure of territorial control by governments and rebel groups during civil wars. This allows us to measure, across an ordinal range, which actor controls locations as small as 5km grids for each day during a conflict. We combine this data with new theory about how shifts in territorial control influence combatants' political and military strategies. For example, we find that rebels moving into an area with a weak state presence engage in more terrorism and violence against civilians to coerce civilians into not cooperating with government forces. We also find that initial patterns of rebel violence shift over time. In areas that rebels are interested in conquering, their forces escalate the use of violence over time. However, in areas that are under secure rebel control, violence spikes initially, but then declines quickly. We theorize that these patterns are driven the interaction of rebels' military objectives of defeating government forces on the battlefield, and their interests in increasing support from civilians for their political objectives.
- In realizing these accomplishments, we developed new, open-source data and tools that will be of use to the scholarly and academic communities. These include the project website (<a href="http://www.civilwardynamics.org">http://www.civilwardynamics.org</a>), the Rebel Contraband Dataset, the Resource Location Dataset, The Rebel Human Rights Dataset, and the data on territorial control described above. We also developed new software for automating the extraction of event characteristics and geo-locations from text (Halterman, *Journal of Open Source Software*, 2016; Halterman, Society for Political Methodology, 2018), a QGIS plug-in for calculating zones of territorial control, and the CIVET interface for human-assisted coding of variables from text.

While funding for this project has ended, we plan to continue to build on these accomplishments. Team members have a number of working papers that are currently under review at peer-review journals, or will be submitted shortly. We also plan to explore opportunities to seek funding to extend the datasets described above.

## **Training Opportunities**

The project provided many training opportunities to graduate and undergraduate students; details on the number and identity of these students are provided elsewhere in this report. Graduate students in Government (University of Texas at Austin), Public Policy (UNC Charlotte), Geography (UNC Charlotte), and Political Science (University of Albany) have been engaged as research assistants. Specific skills these graduate students learned included systematic data coding and collection, managing teams of (mostly undergraduate) coders, data analysis skills (in ArcGIS, QGIS, Python, R, and Stata), and software development (in QGIS and Python). The project has also employed dozens of undergraduate research assistants at UNC Charlotte, the University of Texas at Austin, and the University of Albany. These students acquired skills in data collection (emphasizing the importance of reliability and validity), statistical analysis, and team work. A number of these students have used data from the project to write Honors Theses. Two students entered PhD programs after graduation; multiple students have gone on to purse graduate training in a variety of fields.

Co-PIs on the project co-authored research papers with graduate students and an undergraduate student. These include:

Paper Title: Financing Rebellion

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Kaitlin Hudak, Public Policy, University of North Carolina at

Charlotte

Paper Title: Rebel Natural Resource Exploitation and the Duration of Civil Wars

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Kevin T. Greene, Political Science, University of Pittsburgh

Paper Title: Accounting for Rebellion: How Rebels Finance Their Violence

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Kevin T. Greene, Political Science, University of Pittsburgh

Paper Title: Rebel Human Rights Abuses During Civil Wars

Co-PI Authors: Conrad, Walsh, Whitaker

Graduate Student Co-Author: Samuel Wilmer, Political Science, Pennsylvania State University

Paper Title: Crime Pays

Co-PI Author: James A. Piazza

Graduate Student Co-Author: Scott Piazza, Political Science, Pennsylvania State University

Paper Title: Rebel Resource Extraction and Healthcare: Strategic Incentives for Social Service

Provision Co-PI Authors: Justin M. Conrad

Graduate Student Co-Author: Liana Reyes-Reardon, Rice University

Paper Title: Territorial Control and Violence Against Civilians nn Civil Wars

Co-PI Authors: Thill, Walsh

Graduate Student Co-Author: Ran Tao, Geography, University of North Carolina at Charlotte

Paper Title: Territory, Battles, and Terrorism in Civil Wars: A Quantitative Analysis of Boko

Haram in Nigeria Co-PI Authors: Thill, Walsh

Graduate Student Co-Author: Ran Tao, Geography, University of North Carolina at Charlotte

Two graduate students also used support from the project to write papers without co-PI coauthors:

Graduate Student: Kevin Greene, Political Science, University of Pittsburgh Paper: Time to Lift the Curse?

Graduate Student: Andrew Halterman, Political Science, Massachusetts Institute of

Technology Paper: Mordecai

Co-PIs also co-authored a paper with an undergraduate student:

Paper: Diaspora Support and Conflict Duration

Co-PI Author: Beth Elise Whitaker

Undergraduate Student: Isaac Setliff, Political Science, University of North Carolina at Charlotte

#### Dissemination

In addition to peer-reviewed publications, presentations at scholarly meetings, invited talks at other universities, and participation in the Minerva Annual Meeting and Program Review, we have sought outreach activities beyond the academic community. These include:

- Summary of findings from the Rebel Contraband Dataset in the Newsletter of the Africa Research Initiative, National Intelligence University.
- Research briefs on natural resources and conflict in Africa (available at www.civilwardynamics.org)
- Multiple presentations to the Joint Foreign Affairs Officer Program Africa Course.
- Multiple presentations to the NAVAIR Global Perspectives Seminar, October 2014 and April 2015.
- Presentation at the Washington, DC office of Global Witness.
- Presentation to the DHS/START SMA Lecture Series.
- Presentation to the Minerva SMA Lecture Series on Africa.
- Presentation to the Geostrategic Intelligence Seminar: Conflict in Africa, Defense Intelligence Agency.
- Meeting with Bryan Price and Daniel Milton, Combating Terrorism Center, United States Military Academy.

- Presentation at the Defense Intelligence Agency
- Post on "Political Violence at a Glance" blog on territorial control
- Presentation to the Military Operations and Law Conference, United States Pacific Command
- Presentation to the Committee on Assessing the Minerva Research Initiative and the Contribution of Social Science to Addressing Security Concerns, The National Academies of Science, Engineering, and Medicine
- Presentation to the Empirical Studies of Conflict meeting, United States Institute of Peace, Washington
- Presentations to the Minerva SMA Speaker Series

# **Participants**

Type	First Name	Last Name	Person-Months
PI	James	Walsh	3
Co-PI	Jean-Claude	Thill	2
Co-PI	Michael	Findley	3
Co-PI	James	Piazza	2
Co-PI	Victor	Asal	3
Other Professional	Philip	Schrodt	3
Other Professional	Daniel	Strandow	2
Other Professional	Kenneth	Cousins	1
High School Student	Jackson	Smith	1
Graduate Student	Andrew	Halterman	1
Graduate Student	Michelle	Haragos	2
Graduate Student	Katelin	Hudak	6
Graduate Student	Jessica	Hall	2
Graduate Student	Gavin	Iddings	2
Graduate Student	Ran	Tao	2
Graduate Student	Andrew	Stravers	3
Graduate Student	Ataurraheem	Chaudhry	1
Graduate Student	Tawheeda	Wahabzada	1
Graduate Student	Michael	Denly	2
Undergraduate Student	Madison	Bishop	1
Undergraduate Student	Emily	Young	1
Undergraduate Student	Raven	Longhorne	1
Undergraduate Student	Ashley	Huddleston	1
Undergraduate Student	Jordan	Woods	1
Undergraduate Student	Justin	Jones	1
Undergraduate Student	Kevin	Greene	1
Undergraduate Student	Koffi		1
Undergraduate Student	Sebastian	Feculak	1
Undergraduate Student	Michelle	Haragos	1
Undergraduate Student	Jason	Sanft	1
Undergraduate Student	Samuel	Wilmer	1
Undergraduate Student	Janelle	Day	1
Undergraduate Student	Emily	Grassett	1
Undergraduate Student	Andrea	Greer	1
Undergraduate Student	Daniel	Chapman	1
Undergraduate Student	Anna	Scanlon	1

Undergraduate Student	Louchi	Chi	1
Undergraduate Student	Alejandra	Gaytan	1
Undergraduate Student	Vishal	Duvvuru	1
Undergraduate Student	Amy	Leung	1
Undergraduate Student	Josh	Malett	1
Undergraduate Student	Josh	Hamlin	1
Undergraduate Student	Haley	Galloway	1
Undergraduate Student	Jennifer	Johnson	1
Undergraduate Student	Kolby	Vidrine	1
Undergraduate Student	Lily	Hayes	1
Undergraduate Student	Santiago	Vallejo	1
Undergraduate Student	Joyce	Jiang	1
Undergraduate Student	Gabby	Torres	1
Undergraduate Student	Matt	Tiritilli	1
Undergraduate Student	Yefan	Zhou	1